

Abstract

A data transfer driver for a disk drive including recording media having one or more recording surfaces, one or more data transducer heads positionable relative to the recording surfaces by a head position actuator structure operating within a head position servo loop. The data transfer driver includes a preamplifier having: a control interface for receiving configuration information to selectively transfer data to and from recording surfaces; one or more head interfaces, each head interface electrically connected to a transducer head for controlling the transducer head for data read and/or write operations; and a controller electrically connected to the control interface and to each head interface, for controlling the operation of each head interface based on the configuration information for selectively: (i) writing data to at least one recording surface, (ii) reading data from at least one recording surface, and (iii) simultaneously reading from at least one recording surface and writing data to at least one recording surface. The preamplifier can be used for self-servo writing a disk drive by transferring a servo reference pattern onto a recording surface of a reference disk, where the reference pattern includes servo clock information providing transducer head circumferential relative position information, and servo position information providing transducer head radial relative position information. The disk drive is assembled by installing the reference disk and one or more data disks into the disk drive and enclosing the disks and data transducers within a housing. The self-servo writing process includes the steps of reading the reference pattern from the reference disk via a head and using the read servo clock and the servo position information to precisely position and maintain one or more heads at concentric track locations of one or more disk recording surfaces while writing final servo patterns onto the recording surfaces at the concentric track locations in accordance with servo pattern features.